UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,383	08/27/2003	Paul W. McBurney	SS-734-17	7173

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EXAMINER
HAROON, ADEEL

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/650,383	MCBURNEY, PAUL W.
	Examiner	Art Unit	
	Adeel Haroon	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 February 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Response to Amendment

1.   This Office Action is in response to Amendment filed on date: 2/21/06.

Claims 1-9 are still pending.

Response to Arguments

2.   Applicant's arguments filed 2/21/06 have been fully considered but they are not

persuasive.

The applicant argues that the amended claims' added limitations regarding the

initialization of the navigation receiver are not disclosed by Abraham. The examiner

respectfully disagrees. Abraham teaches using its method to initialize the system until

GPS satellite signals are received (Paragraph 40). Therefore, Abraham's method is

used before the navigation receiver is fully initialized.

Claim Objections

3.   Claim 1 is objected to because of the following informalities: the word

"unitialized" in line 2 is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by Abraham

(U.S. 2004/0142701).

With respect to claim 1, Abraham disclose a method for estimating a reference

frequency drift in a navigation receiver associating a PDC handset, element number

104, subject to a standby mode with a navigation receiver, element number 106

(Paragraph 16, lines 1-4 and Paragraph 34). Abraham discloses sampling a VCO,

element number 228, burst information, f and f_e, that is received by the PDC handset

(Paragraph 16). Abraham teaches periodically sampling while in standby mode

(Paragraph 26).   Abraham also discloses running a NCO, element numbers 250 and

252, at a nominal frequency and periodically adjusting said NCO with samples obtained

in the step of sampling (Paragraph 29). Since the frequency error signal corresponds to

the signal from the base station, pilot or carrier tone, it provides the basis for accurate

frequency measurement through a series of snap-shots (Paragraph 22). Abraham

teaches correlating, using element number 254, both in-phase and quadrature-phase

outputs of the NCO (Paragraph 32). Abraham further teaches computing a navigation

receiver reference frequency drift estimate (Paragraph 29 and 30). Since this method is

used in the initialization of the navigation receiver, it reduces local oscillator frequency

uncertainty (Paragraph 40).

With respect to claim 2, Abraham further discloses building a reference signal

from data output by NCO and passing such as updates (Paragraph 29). The reference

signal is interpreted as a reference sinewave since all signals are some derivative of a

sinewave.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 3-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Abraham (U.S. 2004/0142701) in view of Eberlein et al. (U.S. 6,973,121).

With respect to claim 3, Abraham discloses a circuit for estimating reference frequency drift in a navigation receiver comprising a NCO, element numbers 250 and 252, periodically receiving an NCO_value, f and f_e, on which an NCO output frequency depends (Paragraph 29). Abraham discloses a first and second mixer in the tuner, element number 246, connected to an output of the NCO, reference signal, and combining it with a clock signal, and providing further an I-mix and Q-mix signal (Paragraph 29). Abraham also discloses and I and Q correlator, element number 254, for correlating the I and Q mix signals and outputting I and Q correlation outputs (Paragraph 32). Abraham discloses sampling a VCO, which is synchronized with the master clock, periodically and the VCO at these times must be locked to a precision carrier frequency signal from the wireless communication network (Paragraph 26). Abraham further discloses having a drift estimate output comprising the I and Q correlation outputs (Paragraphs 29 and 30). Since this method is used in the initialization of the navigation receiver, it reduces local oscillator frequency uncertainty (Paragraph 40). Abraham does not expressly disclose the use of lookup tables for approximating the reference signals. However, Eberlein et al. discloses a receiver system that teaches the use of lookup tables, element number 62, for approximating a sine and cosine wave for the inphase and quadrature version of an NCO output frequency (Column 7, lines 50-56). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply Eberlein et al.'s lookup table technique to the circuit of Abraham in order to not perform calculations each time.

With respect to claim 4, Abraham further discloses the NCO receiving data write from a firmware control program and connected to gate a clock signal to the tuner, first and second mixer thereby inherently having a NCO value holding latch (Paragraphs 29 and 30).

With respect to claim 7, Abraham discloses a method for estimating a reference frequency drift in a navigation receiver (Paragraph 16, lines 1-4 and Paragraph 34). Abraham discloses inputting and sampling a VCO, element number 228, burst information, f and f_e, that locked to a precision carrier frequency signal of the wireless communication network (Paragraphs 16 and 22). Abraham also discloses running a NCO, element numbers 250 and 252, at a nominal frequency and periodically adjusting said NCO with samples obtained in the step of sampling (Paragraph 29). Abraham discloses mixing both I an Q signals with the sampled VCO signal (Paragraph 29). Abraham also discloses integrating the mixed signals (Paragraph 32). Abraham further teaches computing a navigation receiver reference frequency drift estimate and adjusting the nominal frequency of the NCO with these results (Paragraph 29 and 30). Abraham does not expressly disclose building sine and cosine waves as reference signals. However, Eberlein et al. discloses a receiver system that teaches the use of lookup tables, element number 62, for approximating a sine and cosine wave for the inphase and quadrature version of an NCO output frequency (Column 7, lines 50-56). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply Eberlein et al.'s lookup table technique to the circuit of Abraham in order to not perform calculations each time.

8.   Claim 5, 6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Abraham (U.S. 2004/0142701) and Eberlein et al. (U.S. 6,973,121) further in view

of Abraham et al. (U.S. 6,819,707).

        With respect to claim 5, the modified circuit of Abraham and Eberlein et al. is

described above in the discussion of claim 3. Neither Abraham nor Eberlein et al.

disclose an I and Q latch. However, Abraham further discloses that the correlator used

is described in U.S. application number 09/963345, which is now U.S. 6,819,707 to

Abraham et al.. Abraham et al. discloses and I and Q latch, element numbers 401a and

401b, for providing a register of I and Q correlation outputs to data read from a firmware

control program (Column 7, lines 60-65). Therefore, it would be obvious to one of

ordinary skill in the art at the time of the applicant's invention to apply Abraham et al.'s

latch technique in the correlator of the modified circuit of Abraham and Eberlein et al. in

order to provide a record of the outputs.

        With respect to claim 6, Abraham discloses a frequency discriminator circuit for

estimating reference frequency drift of a navigation receiver associated with a mobile

telephone in standby mode in figure 1. Abraham discloses sampling a VCO, which is

synchronized with the master clock, periodically and the VCO at these times must be

locked to a precision carrier frequency signal from the wireless communication network

(Paragraph 26). Abraham teaches using this method at the initialization of the

navigation receiver (Paragraph 40). Abraham discloses a NCO, element numbers 250

and 252, loaded with an NCO value, f and f_e, to synthesize the frequency of the VCO

signal (Paragraph 29). Abraham discloses sampling a VCO, periodically and the VCO

at these times must be locked to a precision carrier frequency signal from the wireless

communication network (Paragraph 26). Abraham discloses a first and second mixer in

the tuner, element number 246, connected to an output of the NCO, reference signal,

and combining it with a clock signal, and providing further an I-mix and Q-mix signal

(Paragraph 29). Abraham also discloses and I and Q integrator, element number 254,

to integrate the I and Q mix signals (Paragraph 32).

Abraham does not expressly disclose the use of lookup tables for approximating

the reference signals. However, Eberlein et al. discloses a receiver system that teaches

the use of lookup tables, element number 62, for approximating a sine and cosine wave

for the inphase and quadrature version of an NCO output frequency (Column 7, lines

50-56). Therefore, it would be obvious to one of ordinary skill in the art at the time of

the applicant's invention to apply Eberlein et al.'s lookup table technique to the circuit of

Abraham in order to not perform calculations each time.

Neither Abraham nor Eberlein et al. disclose an I and Q latch. However,

Abraham further discloses that the correlator used is described in U.S. application

number 09/963345, which is now U.S. 6,819,707 to Abraham et al.. Abraham et al.

discloses and I and Q latch, element numbers 401a and 401b, for providing a register of

I and Q correlation outputs to data read from a firmware control program (Column 7,

lines 60-65). Therefore, it would be obvious to one of ordinary skill in the art at the time

of the applicant's invention to apply Abraham et al.'s latch technique in the correlator of

the modified circuit of Abraham and Eberlein et al. in order to provide a record of the outputs.

With respect to claims 8 and 9, the modified method of Abraham and Eberlein et al. is described above in the discussion of claim 7. Neither Abraham nor Eberlein et al. disclose an I and Q latch for setting and collecting the time intervals of the integrator/corrleator. However, Abraham further discloses that the correlator used is described in U.S. application number 09/963345, which is now U.S. 6,819,707 to Abraham et al.. Abraham et al. discloses and I and Q latch, element numbers 401a and 401b, for providing a register of I and Q correlation outputs for different time intervals and to collect error (Column 7, lines 60-65). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply Abraham et al.'s latch technique in the correlator of the modified circuit of Abraham and Eberlein et al. in order to provide a record of the outputs.

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH
5/1/06

5-14-2006

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PRIMARY EXAMINER